

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Currently Amended): A method for determining characteristics of a thin film, comprising:

irradiating with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

detecting a reflected light ray generated from the processing target by the monitor light ray by a light sensing mechanism having a plurality of substantially continuous light sensing elements; and

measuring a temporal change in an angle distribution of an intensity of the reflected light detected by the light sensing mechanism

~~The method for determining characteristics of a thin film according to claim 1,~~
wherein the light sensing mechanism includes a strip-like fluorescence surface which extends in one arbitrary direction.

Claim 3 (Original): The method for determining characteristics of a thin film according to claim 2, the measurement of the temporal change in the angle distribution of the intensity of the reflected light is to generate electrons corresponding to the reflected light detected by the light sensing mechanism, guide the generated electrons to the fluorescence surface in a strip-like shape extending in one arbitrary direction by an electric field which varies with time, and obtain data for each time acquired on the fluorescence surface.

Claims 4-8 (Canceled).

Claim 9 (Currently Amended): A method for determining characteristics of a thin film, comprising:

irradiating with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

detecting a reflected light ray generated from the processing target by the monitor light ray by a light sensing mechanism having a plurality of substantially continuous light sensing elements;

measuring a temporal change in an angle distribution of an intensity of the reflected light detected by the light sensing mechanism; and

calculating a temporal change in a refractive index and an extinction coefficient of the processing target based on the measured temporal change in the angle distribution of the intensity of the reflected light ray

~~The method for determining characteristics of a thin film according to claim 8,~~
wherein the light sensing mechanism includes a strip-like fluorescence surface which extends in one arbitrary direction.

Claim 10 (Original): The method for determining characteristics of a thin film according to claim 9, the measurement of the temporal change in the angle distribution of the intensity of the reflected light is to generate electrons corresponding to the reflected light detected by the light sensing mechanism, guide the generated electrons to the fluorescence surface in a strip-like shape extending in one arbitrary direction by an electric field which varies with time, and obtain data for each time acquired on the fluorescence surface.

Claim 11 (Original): The method for determining characteristics of a thin film according to claim 10, wherein the data is indicated based on the refractive index and the extinction coefficient.

Claims 12-17 (Canceled)

Claim 18 (Currently Amended): An apparatus for specifying a processing state and/or a finishing state of a processing target, comprising:

a monitor light generation device which can irradiate with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

a light sensing mechanism which detects a reflected light ray generated from the processing target irradiated with the monitor light ray, and detects electrons corresponding to the reflected light ray and/or a light ray obtained by converting the electrons corresponding to the reflected light ray; and

a reflected light measurement mechanism which measures a temporal change in an angle distribution of an intensity of the reflected light ray detected by the light sensing mechanism

~~The apparatus for specifying a processing state and/or a finishing state of a processing target according to claim 15, wherein the reflected light measurement mechanism includes a streak camera.~~

Claim 19 (Currently Amended): An apparatus for specifying a processing state and/or a finishing state of a processing target, comprising:

a monitor light generation device which can irradiate with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

a light sensing mechanism which detects a reflected light ray generated from the processing target irradiated with the monitor light ray, and detects electrons corresponding to the reflected light ray and/or a light ray obtained by converting the electrons corresponding to the reflected light ray;

a reflected light measurement mechanism which measures a temporal change in an angle distribution of an intensity of the reflected light ray detected by the light sensing mechanism; and

a state specifying device which specifies a state of the processing target based on the temporal change in the refractive index and the extinction coefficient of the processing target calculated by the signal processing mechanism

~~The apparatus for specifying a processing state and/or a finishing state of a processing target according to claim 16, wherein the reflected light measurement mechanism includes a streak camera.~~

Claim 20 (Currently Amended): An apparatus for specifying a processing state and/or a finishing state of a processing target, comprising:

a monitor light generation device which can irradiate with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

a light sensing mechanism which detects a reflected light ray generated from the processing target irradiated with the monitor light ray, and detects electrons corresponding to

the reflected light ray and/or a light ray obtained by converting the electrons corresponding to the reflected light ray;

a reflected light measurement mechanism which measures a temporal change in an angle distribution of an intensity of the reflected light ray detected by the light sensing mechanism; and

a light multiplication mechanism which multiplies an intensity of the reflected light ray generated from the processing target irradiated with the monitor light ray after this light enters the light sensing mechanism

~~The apparatus for specifying a processing state and/or a finishing state of a processing target according to claim 17, wherein the reflected light measurement mechanism includes a streak camera.~~

Claims 21-25 (Canceled).

Claim 26 (Currently Amended): An apparatus for specifying a processing state and/or a finishing state of a processing target, comprising:

a monitor light generation device which can irradiate with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

a light sensing mechanism which detects a reflected light ray generated from the processing target irradiated with the monitor light ray, and detects electrons corresponding to the reflected light ray and/or a light ray obtained by converting the electrons corresponding to the reflected light ray;

a reflected light measurement mechanism which measures a temporal change in an angle distribution of an intensity of the reflected light ray detected by the light sensing mechanism; and

a signal processing mechanism which calculates a temporal change in a refractive index and an extinction coefficient of the processing target based on the temporal change in the angle distribution of the intensity of the reflected light ray measured by the reflected light measurement mechanism

~~The apparatus for specifying a processing state and/or a finishing state of a processing target according to claim 23, wherein the reflected light measurement mechanism includes a streak camera.~~

Claim 27 (Currently Amended): An apparatus for specifying a processing state and/or a finishing state of a processing target, comprising:

a monitor light generation device which can irradiate with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

a light sensing mechanism which detects a reflected light ray generated from the processing target irradiated with the monitor light ray, and detects electrons corresponding to the reflected light ray and/or a light ray obtained by converting the electrons corresponding to the reflected light ray;

a reflected light measurement mechanism which measures a temporal change in an angle distribution of an intensity of the reflected light ray detected by the light sensing mechanism;

a signal processing mechanism which calculates a temporal change in a refractive index and an extinction coefficient of the processing target based on the temporal change in

the angle distribution of the intensity of the reflected light ray measured by the reflected light measurement mechanism; and

a state specifying device which specifies a state of the processing target based on the temporal change in the refractive index and the extinction coefficient of the processing target calculated by the signal processing mechanism

~~The apparatus for specifying a processing state and/or a finishing state of a processing target according to claim 24, wherein the reflected light measurement mechanism includes a streak camera.~~

Claim 28 (Currently Amended): An apparatus for specifying a processing state and/or a finishing state of a processing target, comprising:

a monitor light generation device which can irradiate with a monitor light ray at least a position of a processing target which is irradiated with a light energy which can perform predetermined processing or finishing;

a light sensing mechanism which detects a reflected light ray generated from the processing target irradiated with the monitor light ray, and detects electrons corresponding to the reflected light ray and/or a light ray obtained by converting the electrons corresponding to the reflected light ray;

a reflected light measurement mechanism which measures a temporal change in an angle distribution of an intensity of the reflected light ray detected by the light sensing mechanism;

a signal processing mechanism which calculates a temporal change in a refractive index and an extinction coefficient of the processing target based on the temporal change in the angle distribution of the intensity of the reflected light ray measured by the reflected light measurement mechanism; and

a light multiplication mechanism which multiplies an intensity of the reflected light ray generated from the processing target irradiated with the monitor light ray after this light enters the light sensing mechanism

~~The apparatus for specifying a processing state and/or a finishing state of a processing target according to claim 25, wherein the reflected light measurement mechanism includes a streak camera.~~

Claims 29-31 (Canceled).

Claim 32 (Currently Amended): An apparatus for determining characteristics of a semiconductor thin film irradiated with an annealing laser beam, comprising:

a monitor light irradiator which irradiates with a monitor light ray a position irradiated with the laser beam; and

a reflected light measurement device which receives a reflected light ray of the monitor light ray from the thin film, has a light sensing surface having a plurality of substantially continuous light sensing elements, and measures a temporal change in an angle distribution of an intensity of the reflected light ray

~~The apparatus for determining characteristics of a semiconductor thin film irradiated with an annealing laser beam according to claim 31, wherein the light sensing surface includes a fluorescence surface having a strip-like plane shape.~~

Claims 33-35 (Canceled).

Claim 36 (Currently Amended): An apparatus for determining characteristics of a semiconductor thin film irradiated with an annealing laser beam, comprising:

a monitor light irradiator which irradiates with a monitor light ray a position irradiated with the laser beam;

a reflected light measurement device which receives a reflected light ray of the monitor light ray from the thin film, has a light sensing surface having a plurality of substantially continuous light sensing elements, and measures a temporal change in an angle distribution of an intensity of the reflected light ray; and

a signal processing device which calculates a temporal change in a refractive index and an extinction coefficient of the thin film based on the temporal change in the angle distribution of the intensity of the reflected light ray

~~The apparatus for determining characteristics of a semiconductor thin film irradiated with an annealing laser beam according to claim 35, wherein the light sensing surface includes a fluorescence surface having a strip-like plane shape.~~

Claims 37-50 (Canceled).